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Jun Hirano

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Dickinson Wright PLLC

James E. Ledbetter, Esq.

International Square

1875 Eye Street, NW., Suite 1200

WASHINGTON, DC 20006

EXAMINER

PHAN, TRI H

ART UNIT

PAPER NUMBER

2416

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DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/511,333	Applicant(s) HIRANO ET AL.	
	Examiner TRI H. PHAN	Art Unit 2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 37-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 37-42 and 48-53 is/are rejected.
- 7) ☒ Claim(s) 43-47 and 54-58 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>4/17/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment/Arguments

1. This Office Action is in response to the Response/Amendment filed on September 25th, 2008. Claims 1-36 are now canceled and new claims 37-58 are added. Claims 37-58 are now pending in the application.

Claim Objections

2. Claim 48 is objected to because of the following informality:

In line 11, the word “an” in front of “operation control unit belonging to said predetermined layer” should be changed to -- the -- for clarity.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 37 and 48 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- In claim 37, it recites the limitations “**said operation control unit** belonging to said lower layer” in line 13; “**said operation control unit** belonging to **said upper layer**” in line 17;

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“**said processing unit** belonging to said upper layer” in lines 17-18. There are insufficient antecedent bases for these limitations in the claim 37.

Also in claim 37, lines 13-15, the recitation “*wherein said operation control unit belonging to said lower layer notifies, to the operation control unit belonging to said lower layer, availability information indicating whether each of said plurality of processing units belonging to said lower layer is available or not,*” is vague and unclear because the examiner is unclear and do not know why the operation control unit (belonging to said lower layer) is notifying the available information to itself.

- In claim 48, it recites the limitations “**the operation control unit** belonging to an upper layer” in line 12; “**the processing unit** belonging to said upper layer” in line 15. There are insufficient antecedent bases for these limitations in the claim 48.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 39-42 and 50-53 are rejected under 35 U.S.C. 102(e) as being anticipated by **Ji et al.** (U.S.2003/0185233; hereinafter refer as ‘**Ji**’).

- In regard to claim 39, **Ji** discloses *a communication terminal apparatus* ('mobile computing device 430' in fig. 3) *comprising a plurality of layers hierarchically classified depending on different processing functions* (for example see figs. 3-4A; page 1, paras [0004-0005]), *the apparatus comprises*

a processing unit belonging to a predetermined layer ('IP processing 530' in fig. 4A; wherein the IP processing belongs to the IP layer or Network layer, e.g. "*predetermined layer*", in TCP/IP layer model);

a plurality of processing units belonging to a lower layer than said predetermined layer ('MAC processing 532' in fig. 4A; where the MAC processing belongs to the MAC layer or data link layer, e.g. "*lower layer*");

an operation control unit ('link migration module LMM 510' of MALT in fig. 4A; for example see page 5, para [0057], lines 1-5) *for controlling operation of said processing unit belonging to said predetermined layer, said operation control unit belonging to said predetermined layer* (for example see fig. 4A; page 5, para [0057]; lines 9-19; wherein the LMM controls MAC address mapping by MAC to IP binding operation through DBM 528); *and*

an operation control unit for controlling operation of each of said plurality of processing units belonging to said lower layer, said operation control unit belonging to said lower layer ('link sensing module LSM 514' of MALT in fig. 4A; for example see page 5, para [0057]; wherein appropriate interfaces, e.g. MAC interfaces, are selected for connections as disclosed in page 5, paras [0060-0061]; page 6, para [0065]);

wherein said operation control unit belonging to said lower layer notifies, to said operation control unit belonging to said predetermined layer (wherein the LSM provides link availability and quality information to the LMM for controlling selected MAC address, i.e. MAC processing, mapping by MAC to IP binding operation through DBM 528 as disclosed in page 5, para [0057]), availability information ('link availability') to indicate whether it is possible or not to use each of said plurality of processing units belonging to said lower layer, band information ('transmission rate', 'link quality') to indicate a band securable in communication using each of said plurality of processing units belonging to said lower layer, and route information ('link selection') to indicate a connection target connectable in the communication using each of said plurality of processing units belonging to said lower layer when said processing unit is available (for example see page 5, para [0057]; pages 6-7, paras [0072-0074]),

wherein said operation unit belonging to said predetermined layer determines which processing unit belonging to said lower layer is connectable to a desired connection target based on the route information (for example see page 5, paras [0057-0060; page 6, para [0065]; page 7, para [0074]; where appropriate interfaces, e.g. MAC interfaces, are selected for connections through MAC to IP binding operation), and

wherein said processing unit belonging to said predetermined layer can selectively use said plurality of processing units belonging to said lower layer that is connectable to the desired connection target, through control of said operation control unit belonging to said predetermined layer (for example see figs. 3, 4A and 9; page 5, para [0052]; pages 7-8, para [0081]; wherein IP address, i.e. IP processing, is mapped to different MAC address, i.e. MAC processing as disclosed in page 5, para [0060], through MAC to IP binding operation).

- Regarding claims 40 and 51, **Ji** further discloses, *wherein said operation control unit belonging to said predetermined layer comprises an information requesting section for requesting notification of said band information and/or said route information in addition to said availability information to said operation control unit belonging to said lower layer* ('link sensing module LSM 514' in fig. 4A; for example see page 5, para [0057], lines 19-21; pages 6-7, paras [0072-0074]).

- In regard to claims 41 and 52, **Ji** further discloses, *wherein said operation control unit belonging to said predetermined layer comprises an information storage for storing said band information and/or said route information in addition to said availability information* ('ARP 524' in fig. 4A; for example see page 9, para [0094]; wherein the ARP 524 stores/updates MAC address of the preferred interface via "update MAC to IP mapping" command as disclosed in page 5, para [0057]; step 710 in fig. 6; page 7, paras [0074-0075]).

- Regarding claims 42 and 53, **Ji** further discloses, *wherein said operation control unit belonging to said predetermined layer controls selective utilization of one or more of said available processing units belonging to said lower layer by said processing unit belonging to said predetermined layer by referring to said band information and/or said route information in addition to said availability information when said availability information is notified from said operation control unit belonging to said lower layer* (for example see fig. 4A; page 5, para [0057], lines 19-21; page 6, para [0072]; wherein LSM provides link availability to LMM for

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determining MAC address in performing MAC to IP binding operation and wherein the best link is selected through link availability provided from LSM as disclosed in page 6, para [0072] through page 7, para [0074]).

- In regard to claim 50, **Ji** discloses, *a communication control method in a communication terminal apparatus, comprising a plurality of layers hierarchically classified depending on different processing functions* (for example see figs. 3-4A; page 1, paras [0004-0005]), *wherein an operation control unit ('link migration module LMM 510' of MALT in fig. 4A) belonging to a predetermined layer among said plurality of layers* (for example see fig. 4A; page 5, para [0057], lines 1-5; wherein the LMM belongs to Network layer, e.g. "predetermined layer", of other layers in TCP/IP layer model) *selectively utilizes a plurality of processing units belonging to a lower layer than said predetermined layer* (for example see fig. 4A; page 5, para [0057]; lines 9-19; wherein the LMM controls MAC address mapping, i.e. MAC processing units in MAC layer, through MAC to IP binding operation in DBM 528) *and performs communication when said communication terminal apparatus carries out communication* (for example see page 6, para [0069]), *the communication control method comprises*

a step in which said operation control unit belonging to said lower layer notifies, to said operation control unit belonging to said predetermined layer (wherein the LSM provides link availability and quality information to the LMM for controlling selected MAC address, i.e. MAC processing, mapping by MAC to IP binding operation through DBM 528 as disclosed in page 5, para [0057]), *availability information ('link availability') to indicate whether it is possible or not to use each of said plurality of processing units belonging to said lower layer, band information*

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(‘transmission rate’, ‘link quality’) to indicate a band securable in communication using each of said plurality of processing units belonging to said lower layer, and route information (‘link selection’) to indicate connection target connectable in the communication using each of said plurality of processing units belonging to said lower layer when said processing unit is available (for example see page 5, para [0057]; pages 6-7, paras [0072-0074]),

a step in which said operation unit belonging to said predetermined layer determines which processing unit belonging to said lower layer is connectable to a desired connection target based on the route information (for example see page 5, paras [0057-0060; page 6, para [0065]; page 7, para [0074]; where appropriate interfaces, e.g. MAC interfaces, are selected for connections through MAC to IP binding operation), and

a step in which said processing unit belonging to said predetermined layer can selectively use said plurality of processing units belonging to said lower layer that is connectable to the desired connection target, through control of said operation contra/unit belonging to said predetermined layer (for example see figs. 3, 4A and 9; page 5, para [0052]; pages 7-8, para [0081]; wherein IP address, i.e. IP processing, is mapped to different MAC address, i.e. MAC processing as disclosed in page 5, para [0060], through MAC to IP binding operation).

Response to Arguments

7. Applicant's arguments filed on July 25th, 2008 have been fully considered but they are not persuasive.

In the REMARKS, pages 13-14, regarding new claims 39 (apparatus claim) and 50 (method claim), Applicant argues that **Ji** fails to disclose that the operation control unit

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belonging to the lower layer “*notifies route information to indicate a connection target connectable in the communication using each of a plurality of processing units belonging to lower layer*”. Examiner respectfully disagrees. Pages 6-7, paras [0072-00774] describe where the link sensing module, e.g. “*operation control unit belonging to the lower layer*”, detects link available and link quality for each link to connect, e.g. “*route information to indicate a connection target connectable*”, and using ARP message to update ARP engine, e.g. “*notification route information*”, as specified in figs. 5-7; page 5, para [0057]; page 9, para [0094]. Therefore, Examiner concludes that **Ji** teaches the arguable features.

Applicant also argues that **Ji** fails to disclose that the operation unit belonging to the predetermined layer “*determines which processing unit belonging to said lower layer is connectable to a desired connection target based on the route information received from an operation unit of the lower layer*”. Examiner respectfully disagrees. **Ji** discloses, wherein the link migration module LMM 510, e.g. “*operation unit belonging to the predetermined layer*”, based on the detected link available and link quality for each link by the link sensing module LSM 514, e.g. “*operation unit of the lower layer*”, determines ‘best link’ or MAC interface for connection, e.g. “*determines which processing unit is connectable to a desired connection target based on the route information*”, as specified in page 6, para [0065]; page 6-7, paras [[0072-0074].

Therefore, Examiner concludes that **Ji** teaches the arguable features.

Claims 40-42 and 51-53 are rejected as in Part 3 and 4 above of this Office action and by virtue of their dependence from claims 39 and 50.

Allowable Subject Matter

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8. Claims 43-47 and 54-58 are objected to as being dependent upon a rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Claims 37-38 and 48-49 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter: Many references in the art disclose the control and operation of the communication device. Most of those references are disclosed the communication device, which detects and selects the link availability for use based on the link information, such as that found in Ji et al. [U.S. 2003/0185233]. But no prior art reference utilizes the availability information, e.g. availability, band and route information, for the “*operating units*” to operate and control multiple “*processing units*” throughout multiple layers, i.e. “*predetermined layer*”, “*lower layer*”, “*upper layer*”, structurally and functionally interconnected with other limitations in a manner as recited in claims 37-38.

Substantially regarding claim 48, the prior art of record also fails to show the control method for performing communication at different layers as the same manner set forth in claim 37.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

10. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tri H. Phan, whose telephone number is (571) 272-3074. The examiner can normally be reached on M-F (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H. Pham can be reached on (571) 272-3179.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office, whose telephone number is (571) 272-2600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Chi H Pham/

Supervisory Patent Examiner, Art Unit

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10/22/08

/Tri H. Phan/

Examiner, Art Unit 2416

October 25, 2008